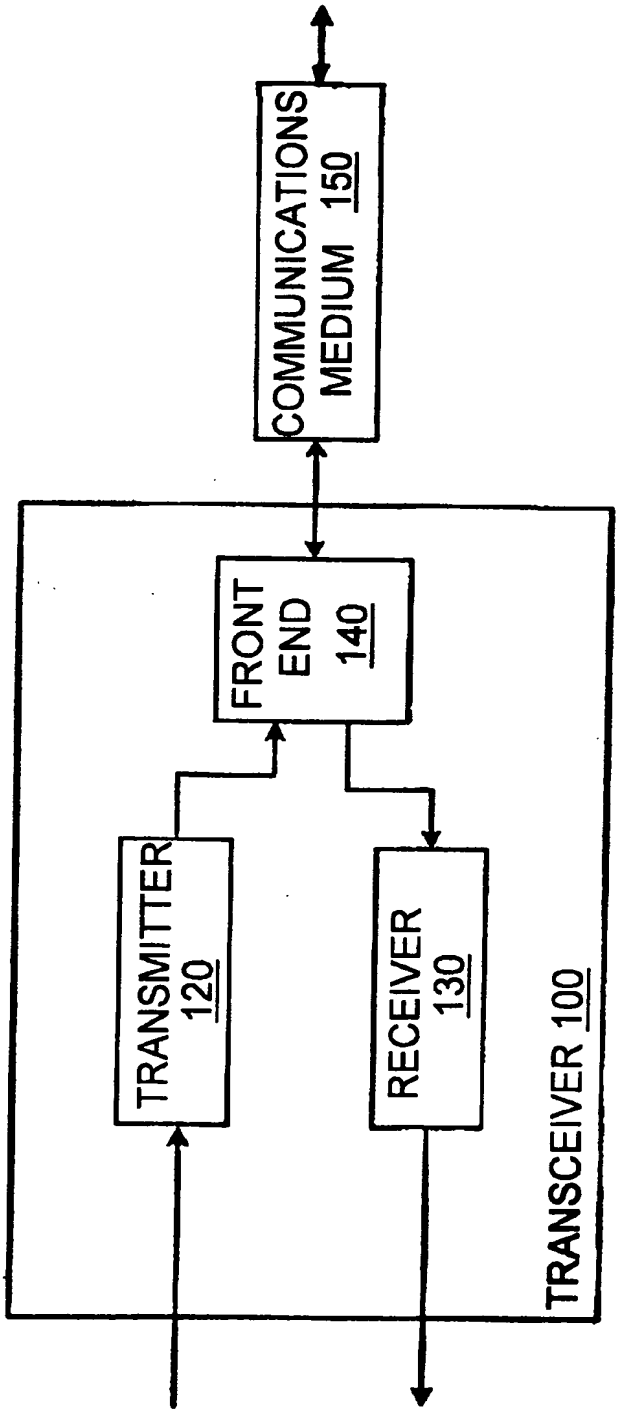
COMMUNICATIONS MEDIUM 150
FRONT END 140
TRANSMITTER 120
RECEIVER 130
TRANSCEIVER 100

FIG. 1

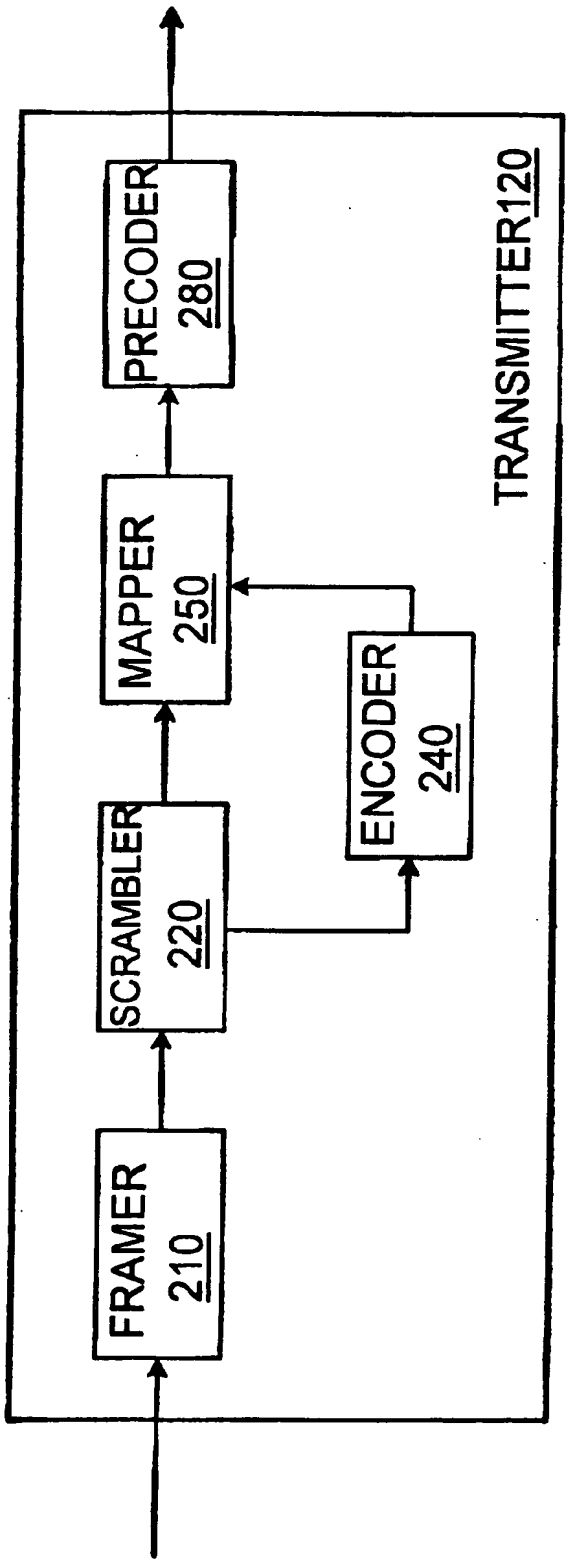
TRANSMITTER 120
FRAMER 210
SCRAMBLER 220
ENCODER 240
MAPPER 250
PRECODER 280

FIG. 2

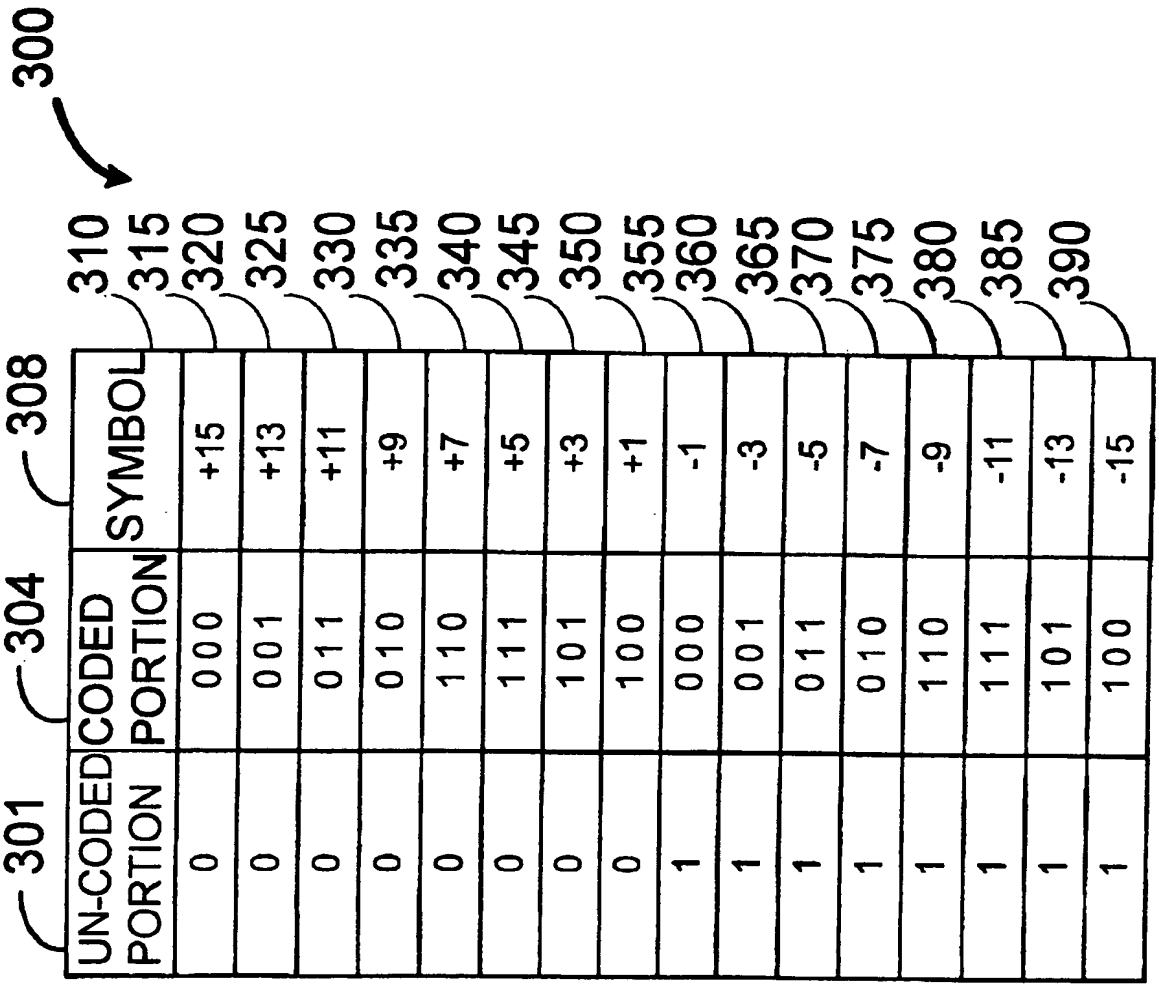
300
301
304
308
310
315
320
325
330
335
340
345
350
355
360
365
370
375
380
385
390
UN-CODED PORTION
CODED PORTION
SYMBOL
0 000 +15
0 001 +13
0 011 +11
0 010 +9
0 110 +7
0 111 +5
0 101 +3
0 100 +1
1 000 -1
1 001 -3
1 011 -5
1 010 -7
1 110 -9
1 111 -11
1 101 -13
1 100 -15

FIG. 3

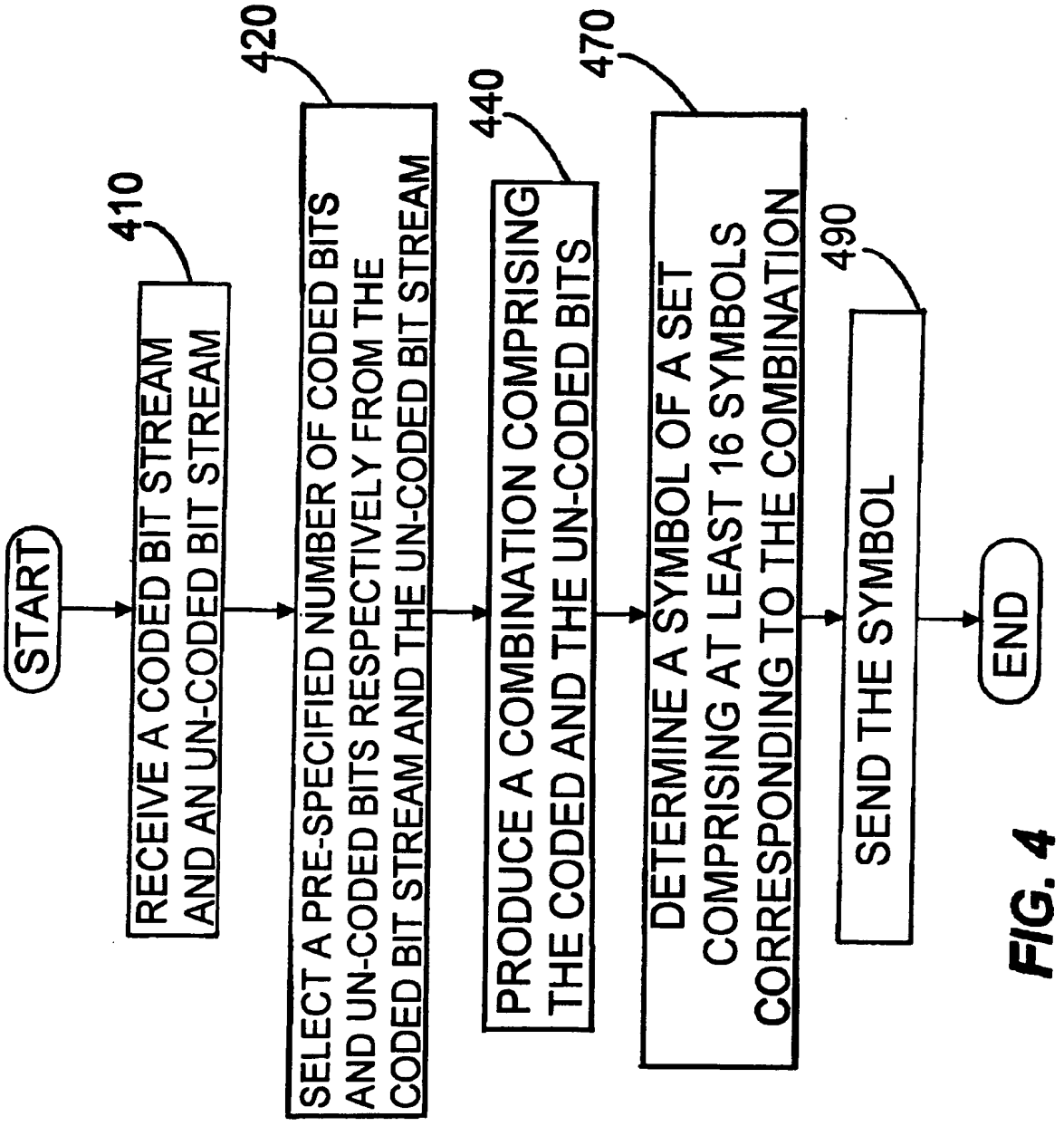
START
410
RECEIVE A CODED BIT STREAM AND AN UN-CODED BIT STREAM
420
SELECT A PRE-SPECIFIED NUMBER OF CODED BITS AND UN-CODED BITS RESPECTIVELY FROM THE CODED BIT STREAM AND THE UN-CODED BIT STREAM
440
PRODUCE A COMBINATION COMPRISING THE CODED AND THE UN-CODED BITS
470
DETERMINE A SYMBOL OF A SET COMPRISING AT LEAST 16 SYMBOLS CORRESPONDING TO THE COMBINATION
490
SEND THE SYMBOL
END

FIG. 4

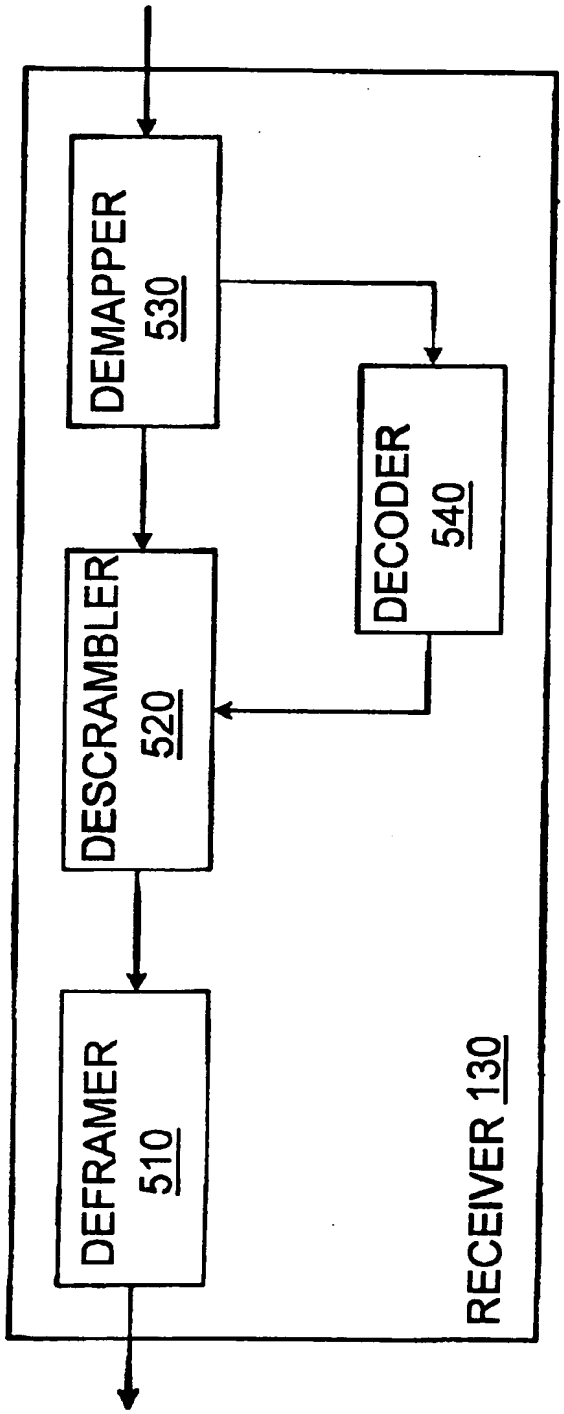
DEMAPPER
530
DESCRAMBLER
520
DEFRAMER
510
DECODER
540
RECEIVER 130

FIG. 5A

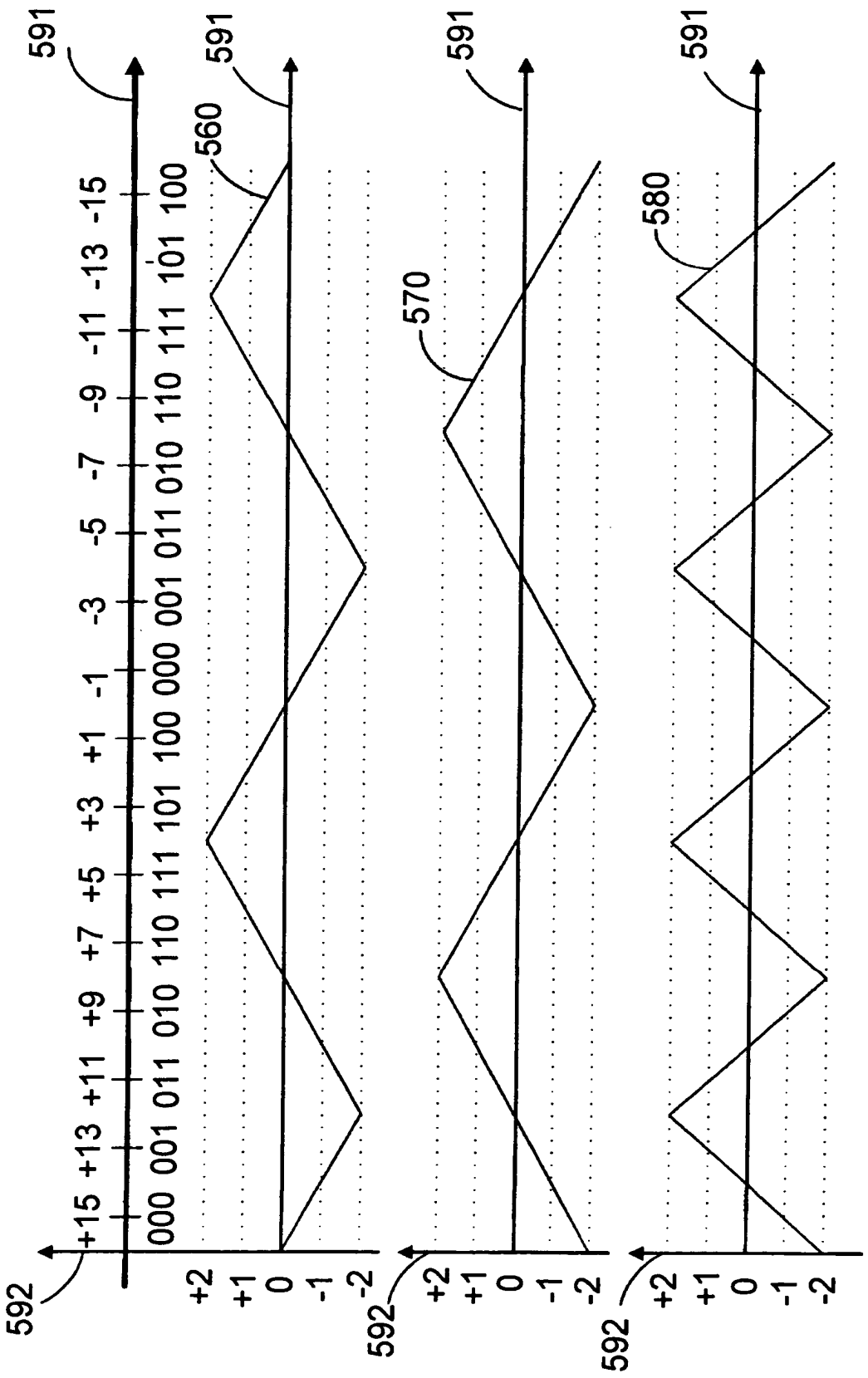
591
591
591
591
591
591
560
570
580
+15 +13 +11 +9 +7 +5 +3 +1 -1 -3 -5 -7 -9 -11 -13 -15
000 001 011 010 110 111 101 100 000 001 011 010 110 111 101 100
+2
+1
0
-1
-2
592
592
592

FIG. 5B

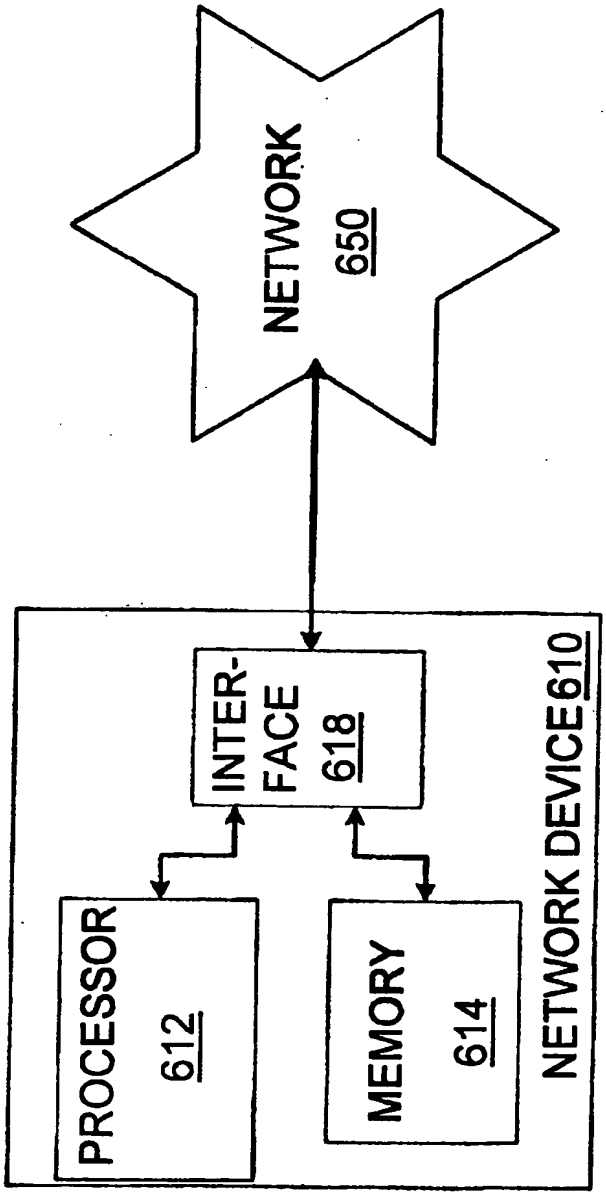
NETWORK
650
INTER-
FACE
618
PROCESSOR
612
MEMORY
614
NETWORK DEVICE 610

FIG. 6